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CERTIFICATE OF MAILING

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PRELIMINARY AMENDMENT

SIR:

Prior to examination, please amend the above-referenced application as indicated below:

IN THE CLAIMS

1. A method of selecting signals to transfer between a head transponder and tail transponder, the method comprising the acts of:

tuning an applied bit rate window of a head transponder to a predetermined frequency;

receiving a request at the head transponder to change the bit rate window;

at the head transponder, generating a communications signal having a bit rate of the predetermined frequency;

at the head transponder, inserting a command into the communications signal, wherein the command states to establish a new bit rate window;

at the head transponder, transmitting the communications signal to a downstream element; and

at the head transponder, transferring payload of incoming signals having a bit rate within the bit rate window.

2. The method of Claim 1, further comprising the acts of:

receiving the communications signal at the tail transponder;

detecting a change in input bit rate at the tail transponder;

at the tail transponder, generating a response signal having a similar bit rate as the communications signal;

at the tail transponder, inserting a command into the response signal indicating receipt of a command to set a new bit rate window; and

at the tail transponder, transferring to the head transponder a payload of signals having a bit rate within the bit rate window.

3. The method of Claim 1, further comprising the acts of:

at the head transponder, performing bit rate verification on incoming signals; and

at the head transponder, transferring the payload of signals having a bit rate within the new bit rate window.

4. The method of Claim 2, further comprising the acts of:

at the tail transponder, performing bit rate verification on incoming signals; and

at the tail transponder, transferring the payload of signals having a bit rate within the new bit rate window.

5. The method of Claim 1, wherein the signals are transmitted over a passive optical network (PON), which is a communication fabric comprising optical fiber connected in a tree topology.

6. The method of Claim 1, wherein the signals are transmitted over a passive optical network (PON), which is a communication fabric comprising optical fiber connected in a star topology.

7. The method of Claim 1, further comprising performing FEC encoding on incoming signals at the head transponder.

8. The method of Claim 1, further comprising performing FEC decoding on incoming signals at the head transponder.

9. The method of Claim 2, further comprising performing FEC encoding on incoming signals at the tail transponder.

10. The method of Claim 2, further comprising performing FEC decoding on incoming signals at the tail transponder.

11. The method of Claim 1, further comprising the acts of:

performing bit rate verification on the incoming signals at the head transponder; and

at the head transponder, transferring the payload of signals having a bit rate within the new bit rate window.

12. The method of Claim 2, further comprising the acts of:

performing bit rate verification on the incoming signals at the tail transponder; and

at the tail transponder, transferring the payload of signals having a bit rate within the new bit rate window.

13. (New) A transponder that communicates to at least one downstream network element, the transponder comprising:

a clock and data recovery unit ("CDR") coupled to receive the inbound signal, wherein the bit rate window of the CDR is programmable;

a communications signal generator that generates a communications signal;

a multiplexer ("MUX") coupled to receive the communications signal from the communications signal generator and coupled to receive the inbound signal from the CDR and that transfers either the communications signal or the inbound signal (hereafter "transferred signal" refers to either the communications signal or the inbound signal);

a central processing unit ("CPU") coupled to the MUX and that controls which signal the MUX transfers;

a framing device coupled to receive the transferred signal from the MUX, wherein the framing device embeds a message into the communications signal and such message is directed to the at least one downstream network element; and

a transmitter coupled to receive the transferred signal from the framing device and that transmits the transferred signal to the downstream network element.

14. (New) The transponder of Claim 13, wherein the communications signal is set to a frequency that the at least one downstream network element recognizes as used to transmit messages from the transponder.

15. (New) The transponder of Claim 13, wherein the message instructs the at least one downstream network element to establish a bit rate window.

16. (New) The transponder of Claim 13, wherein the CPU is coupled to control the bit rate window of the CDR.

17. (New) The transponder of Claim 16, wherein the CPU programs the bit rate window of the CDR in response to a command external to the transponder that indicates to change the transponder bit rate window.

18. (New) The transponder of Claim 13, wherein the at least one downstream network element transmits to the transponder a signal having the same frequency as the communications signal and acknowledges the receipt of the message from the transponder.

19. (New) The transponder of Claim 13, wherein the framing device further comprises:

a processor device coupled to receive the transferred signal from the MUX, wherein the processor device recognizes messages embedded in the transferred signal and outputs the messages to the CPU; and

a clock counter coupled to receive the transferred signal from the MUX, wherein the clock counter counts the bit rate of the transferred signal and outputs the bit rate to the CPU.

20. (New) The transponder of Claim 13, wherein

the framing device comprises a switch coupled to receive the transferred signal from the MUX and that selectively outputs the transferred signal to the transmitter and wherein

the CPU commands the switch to transfer a data payload portion of the transferred signal to the transmitter if the counted

bit rate is within the programmed bit rate window of the transponder.

21. (New) A transponder coupled to receive inbound signals from at least one upstream network element and those outbound signals from at least one downstream network element, wherein the inbound signals include messages from the at least one upstream network element, the transponder comprising:

a clock and data recovery unit ("CDR") coupled to receive the inbound signal, wherein a bit rate window of the CDR is programmable and wherein the CDR determines whether the bit rate of the inbound signal is within the bit rate window;

a communications signal generator that generates a first communications signal;

a multiplexer ("MUX") coupled to receive the first communications signal from the communications signal generator and coupled to receive the outbound signal and that transfers either the first communications signal or the outbound signal (hereafter "transferred signal" refers to either the first communications signal or the outbound signal);

a central processing unit ("CPU") coupled to the MUX and that controls which signal the MUX transfers and that is further coupled to the CDR to program the bit rate window;

a framing device coupled to receive the transferred signal from the MUX and the inbound signal from the CDR, wherein the framing device detects messages embedded in the inbound signal; and

a transmitter coupled to receive the transferred signal from the framing device and that transmits such transferred signal to the at least one upstream network element; wherein

if CDR detects the bit rate of the inbound signal is not within a programmed bit rate window, the CPU commands the CDR to

change its bit rate window to include a communications frequency.

22. (New) The transponder of Claim 21, wherein

the MUX transfers the first communications signal to the framing device, wherein the first communications signal is a similar frequency as the inbound signal;

the framing device embeds a message into the first communications signal that acknowledges receipt of the inbound signal; and

the transmitter transfers the first communications signal to the at least one upstream network element.

23. (New) The transponder of Claim 21, wherein:

the transponder receives a second communications signal from the at least one upstream network element having a message embedded that specifies a new bit rate window to apply;

the framing device recognizes the message embedded in the second communications signal and outputs the message to the CPU, wherein the message specifies a new bit rate window for the transponder to apply; and

the CPU commands the CDR to change its bit rate window to that specified in the message.

24. (New) The transponder of Claim 21, wherein the framing device further comprises:

a processor device coupled to receive the first communications signal from the MUX and further coupled to receive the inbound signal from the at least one upstream network element, wherein the processor device embeds messages into the first communications signal in response to commands from the CPU and wherein the processor device recognizes the message embedded in the second communications signal and outputs the message to the CPU; and

an encoder device coupled to receive the first communications signal from the MUX and coupled to receive messages from the processor device, wherein the encoder device embeds the messages from the processor device into the first communications signal.

25. (New) The transponder of Claim 21, wherein

the framing device comprises a switch coupled to receive the transferred signal from the MUX and that selectively transfers the transferred signal to the transmitter and wherein

the clock counter transfers a counted bit rate of the transferred signal to the CPU;

the CPU commands the switch to transfer a data payload portion of the transferred signal to the transmitter if the counted bit rate is within the bit rate window.

26. (New) The transponder of Claim 24, wherein the message allows for the transponder to communicate with the at least one upstream network element.

REMARKS

Claims 13-26 are newly added and should be considered in the initial examination. Claims 13-26 are supported in the specification for example in FIGs. 3A and 3B.

Respectfully submitted,
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By: ______________________

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